Revitalizing,
Sustaining,
Strengthening

2003 IMPACT REPORT

Gaining Ground

College of Tropical Agriculture
and Human Resources
University of Hawai‘i at Mānoa
VISION

CTAHR will actively help Hawai‘i diversify its economy, ensure a sustainable environment, and strengthen its communities and will be the premier resource for tropical agricultural systems and resource management in the Asia-Pacific region.

MISSION

The College of Tropical Agriculture and Human Resources is committed to the preparation of students and all citizens of Hawai‘i for life in the global community through research and educational programs supporting tropical agricultural systems that foster viable communities, a diversified economy, and a healthy environment.

INITIATIVES

• Provide an excellent and relevant student-centered learning environment.
• Create new economic opportunities through research.
• Transfer useful knowledge responsively to the community at large.
As we look back on 2003, the College of Tropical Agriculture and Human Resources (CTAHR) has good news to celebrate and fresh challenges to address. We have made great gains in expanding our student enrollment and finding new sources of extramural funding for research, education, and outreach. We have been able to support important conversations that show promise in resolving complex, longstanding land use issues. We value these opportunities to help Hawai‘i and the Asia-Pacific region achieve economic revitalization, sustainable environmental management practices, and stronger, healthier communities, and we look forward in the coming year to continued progress toward these goals.

When I arrived at CTAHR in October 2000, the College was consolidating and reorganizing to better meet the needs of students and stakeholders. The academic programs that were developed in the following months first appeared in the University of Hawai‘i-Mānoa’s print and Web materials in Fall 2002. To bring this new curriculum to a wider audience, we established multiple outreach approaches to engage high-school and university students in the meaningful and interesting work going on at CTAHR. We are happy to report that students have embraced these efforts, raising Fall 2003 enrollment to its highest level in 15 years. Training more young people in agriculture, environmental science, and community resource development ensures continued advances in these key areas.

At the same time that CTAHR has sought to assist the state in diversifying its economy, we have also pursued that aim within the College, seeking new sources of financial support. Recognizing that tight budgets call for increased creativity, our faculty and staff have made every effort to acquire outside resources for their research, education, and outreach programs. Extramural grants and other awards increased by 35 percent between fiscal years 2001 and 2003, and in the first half of fiscal year 2004 we surpassed the previous full year’s total by more than 10 percent. We eagerly anticipate the future impacts that these funds will make possible.

Another front on which CTAHR is seeking creative solutions is agricultural land use policy. Article XI, Section 3 of the Hawai‘i State Constitution declares that “the State shall conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency, and assure the availability of agriculturally suitable lands.” As part of the Agriculture Working Group, the College has joined with representatives from the farming and agribusiness community, landowners, public agencies, and citizens’ organizations to develop a mutually acceptable process for identifying important agricultural lands and incentives to support long-term
agricultural viability. During its 2003 session, the Hawaii State Legislature passed House Concurrent Resolution 157, which formally acknowledged the Agriculture Working Group’s efforts.

The stories that make up this report illustrate CTAHR’s ongoing commitment to nurture business opportunities, care for the islands’ rich resources, and promote the health and well-being of Hawai’i’s people. Among this years’ accomplishments are discoveries relating to the biochemistry of kava that constitute good news for growers and the customers they serve; effective management of invasive species that safeguards the state’s natural and human environments; and diet and hygiene recommendations that strengthen individuals and their communities. Through these projects and many others, the members of our College strive to gain new knowledge and share its benefits. I am proud to be part of their efforts, and I thank them for their hard work and dedication.

Aloha,

Andrew G. Hashimoto
Dean and Director
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At the start of 2002, prospects were bright for Hawai‘i’s kava (‘awa) producers. Farm revenues for 2001 were $585,000, up more than 400 percent from the previous year. Kava had an international market as a popular herbal supplement used to relax muscles, ease tension, and promote sleep. By early 2003, however the Pacific kava industry was in crisis. Kava was suspected of poisoning more than 60 people and causing three deaths. Countries in Europe, Asia, and North America had banned the sale of kava products. The FDA had issued warnings, and U.S. kava sales had fallen sharply.

Had a plant used by Pacific Islanders for at least two thousand years suddenly become lethal? CTAHR researchers may have uncovered what went wrong. C.S. Tang, Pratibha Nerurkar, and graduate student Klaus Dragull think that the liver damage observed in some people who took kava supplements may have been caused by chemical compounds, called alkaloids, that are present in kava’s aboveground stems and leaves but not in the roots and rootstalks used to make the traditional water-based kava beverage. Liver cells in laboratory culture are damaged by one kava alkaloid, pipermethystine, but are not harmed by another class of chemicals, the kavalactones that cause kava’s calming effects. As demand for kava exceeded supply in the late 1990s, alkaloid-rich peelings from aboveground stems probably found their way into kava supplements. Tang recommends avoiding kava leaf tea and kava pills that may contain aboveground tissues, but he believes that kava root beverage is safe. Another CTAHR faculty member, Amy Brown, is working with UH anthropologists and medical researchers to test the liver function of kava drinkers.

If further studies find that belowground kava tissues don’t cause liver damage, the results would be a key step to reviving sales and repealing national bans on kava root products. CTAHR is working to provide a healthy future for growers and consumers of an ancient crop.
The 2003 Ag/LICH conference exemplified the breadth and depth of Hawai‘i’s agriculture and landscape communities.

“The conference served as a perfect platform for learning and dispersing up-to-date information. By coming together, networking, finding unity, we make agriculture stronger.”

Ken Kamiya
Kamiya Farms

“We may think that different commodities don’t have much in common, but the conference lets all parts of the industry see the commonalities: land, water, business, marketing. Whether you raise cattle or grow vegetables, the issues are the same.”

Wendell Koga
Hawaii Farm Bureau Federation

“Participant feedback from the 2003 Ag Conference was outstanding—very positive. This year’s collaboration with LICH builds capacity in the agriculture industry. We will continue to partner with other council groups and ask various commodity groups to participate in the future.”

Loren Mochida
Agricultural Leadership Foundation of Hawaii

ECONOMIC REVITALIZATION

Strength in Numbers

Changing Times: Growing Opportunities, the 2003 Hawai‘i Agriculture and Landscape Industry Conference, brought an unprecedented diversity of viewpoints to a discussion of “the business of agriculture.” Co-sponsored by the Agricultural Leadership Foundation of Hawaii, the Hawaii Farm Bureau Federation, the Landscape Industry Council of Hawaii, and CTAHR, Ag/LICH 2003 expanded on last year’s statewide agricultural conference. People who participate in the conversion of land and water into food, fiber, fuel, and materials were joined by people who use the same resources to create beauty and recreational opportunities. With more than 600 participants, the conference illustrated the breadth and depth of Hawai‘i’s agriculture and landscape communities.

A field day and tradeshow held in Kapi‘olani Park preceded the conference. Vendors and experts had an opportunity to demonstrate the latest goods, services, and techniques in agriculture and landscaping. The conference opened with a talk by Texas Christian University’s David Minor on the skills, habits, and traits that characterize successful businesspeople. At lunch, Gov. Linda Lingle articulated her vision for the future of Hawai‘i’s “working landscape,” noting the importance of the agriculture and landscape industries to the state. UH alumnus David Cole of Maui Land and Pineapple Co. spoke about sustainable agriculture and his experience in establishing and running an organic farm. Individual sessions addressed topics ranging from business practices to turfgrass, farmland conservation to pest control.

Next year’s conference seeks to draw broader participation, supplementing and enhancing commodity-specific activities by building coalitions through which many different groups can communicate their shared needs and common goals. Farmers, ranchers, landscape professionals, related non-profits and business ventures, educators, landholders, land and water resource specialists, and agents of county, state, and federal governments are encouraged to add their voices to the conversation.
Cornering New Markets and Marketing New Corn

When James Brewbaker joined the College of Tropical Agriculture’s newly formed Horticulture Department in 1961, sugar was the state’s biggest, most profitable crop, and the year’s total corn harvest was valued at $109,000. He soon recognized the islands’ potential for growing the seed on which large-scale temperate field corn production is based. Brewbaker collaborated with two mainland seed producers to establish a seed corn crop on Moloka‘i in 1966. His subsequent success in attracting industry attention to the state’s mild subtropical climate and year-round growing season yielded a remarkable harvest. In “Dr. B’s” first 40 years at CTAHR, the value of Hawai‘i seed corn grew exponentially, reaching more than $47.5 million for the 2002–2003 season.

Brewbaker’s accomplishments extend far beyond the state’s seed industry. An avid fan of sweet corn who has been called the “grandfather of supersweet corn in Asia,” he has bred many tropical supersweet varieties that resist pests and diseases. This year he hosted the 16th Corn Field Day at the Waimānalo Research Station, a public demonstration of different corn hybrids used for grain, silage, or delicious eating fresh off the cob. Brewbaker is also an expert breeder of tropical hardwoods, including the nitrogen-fixing tree leucaena, an important source of wood, fuel, and forage in many countries. He has perhaps the world’s largest collection of native koa seed and is working to identify varieties and conditions for rapid koa growth at lower elevations. Many of the 50 students he has mentored are themselves making important advances to improve agricultural practices and provide for communities worldwide. This year, he added *Corn Production in the Tropics: The Hawaii Experience* to his 250 publications. Brewbaker’s body of work exemplifies CTAHR’s commitment to research, instruction, and outreach that promotes diversified agriculture.
Positive response to their ideas led them to create Acid Dolls, a line of clothing named to reflect its edgy femininity: part corrosive, part cute.

Two of Hawai‘i’s newest entrepreneurs are celebrating a busy and successful fall season. They identified an untapped market, wrote a business plan, developed and released a product line...all before graduating from college.

As fashion observers, producers, and consumers, Apparel Product Design and Merchandising students Cecilia Kim and Cindy King noticed that Honolulu’s “urban street” clothing boutiques catered mostly to young men. Street apparel options for girls and women ages 15–35 were limited, expensive, and designed elsewhere. Hoping to break fresh ground for “Made in Hawai‘i” attire that isn’t Aloha or beach wear, Cindy and Cecilia asked store owners if they would be willing to carry local designer brands. Positive response to their ideas led them to create Acid Dolls, a line of clothing named to reflect its edgy femininity: part corrosive, part cute.

Cecilia and Cindy credit the APDM curriculum, particularly Diane Chung’s design instruction and the “Brick and Click” retail class taught by Carol Dickson, with helping them turn their passion for clothes into a for-profit venture. A November 2003 debut at Kapi‘olani Community College brought Acid Dolls to the attention of local media, and their Web site (www.aciddolls.com) has already received orders for their unique, handmade pieces. Their next goal is scaling up production and marketing their line in retail stores. Will their logo become a familiar mark on Hawai‘i’s fashion landscape? Remember you saw it here first.

Student entrepreneurs Cecilia Kim and Cindy King model their handmade clothing line, Acid Dolls.
The Taste: CTAHR Celebrates Eight Delicious Years

From the searing steaks to the sizzling Kona weather, the 2003 Taste of the Hawaiian Range was a hot ticket. A capacity crowd gathered at the Hapuna Beach Prince Hotel to enjoy Hawai‘i’s finest forage-fed meats and the Big Island’s freshest produce expertly prepared by talented island chefs, including three winners of the prestigious James Beard Award. CTAHR’s annual celebration of Hawai‘i agriculture and cuisine warmed the hearts and stomachs of hundreds of Big Island residents and welcomed visitors from throughout the islands, the mainland, and Japan.

The Taste, a brainchild of CTAHR’s Glen Fukumoto, Michael DuPonte, Burt Smith (now retired), and Milton Yamasaki, began in 1996 as a companion event to the Cooperative Extension Service’s Mealani Forage Field Day. From its humble beginnings at Kahilu Town Hall in Waimea, the Taste has grown to become one of Hawai‘i’s premier food shows. The Taste moved in 2003 to the Kohala coast, where 34 chefs, 28 vendors and exhibitors, and 1,700 well-fed participants gathered to share Hawai‘i’s diverse and delicious harvest. The event’s success reflected the generosity of the many people and organizations who volunteered and donated their time, goods, and skills.

The setting was new, but the event remained true to its field day roots, promoting the islands’ meats, including beef, pork, mutton, lamb, chicken, goat, bison, and elk. Hawai‘i meats benefit both producers and consumers. By finishing cattle locally, ranchers are able to earn added profits and maintain open space for people and wildlife. By eating locally grown animal products, consumers support Hawai‘i agriculture and lessen our dependence on imported food.

Whether you’re feeling nostalgia for the 2003 Taste of the Hawaiian Range or regretting having missed it, we hope to see you—and your appetite—next year.
The actions of the Coqui Frog Working Group help contain the infestation and eliminate the frogs where possible.

**ENVIRONMENTAL SUSTAINABILITY**

A “Not Welcome” Mat for a Noisy Pest

Your party has been invaded by an uninvited visitor. His appetite is enormous. His whistling for female attention is loud and shrill. Worst of all, he’s not alone; hundreds more like him are just outside your door.

Our party crasher is the coqui frog, which came to Hawai‘i in the late 1980s, probably hitching a ride on a potted plant. On the coqui’s home island of Puerto Rico, its predators—birds, snakes, lizards, and spiders—limit its numbers to about 10,000 per acre. In Hawai‘i, where the coqui has no predators, its population densities have been estimated at three to four times that level. Its eating habits put the state’s unique insect and spider species at risk. It competes with native birds for food. The male’s mating call interferes with human activities, especially sleep. The tiny coqui causes big environmental and social problems.

The Coqui Frog Working Group (CFWG), a cooperative effort pioneered by CTAHR, has brought together the University of Hawai‘i with county, state, and federal agencies and broad community coalitions to contain the infestation and eliminate the frogs where possible. CTAHR’s Arnold Hara, Stacey Chun, Christopher Jacobsen, Ruth Niino-DuPonte and Meg Jones are among the participants in research and outreach efforts that have produced Web sites (including www.ctahr.hawaii.edu/coqui), brochures, and posters to teach Hawai‘i residents how to identify, catch, and humanely kill coquis, limit their spread, and eliminate frog habitat in residential areas. Among the non-toxic control methods developed by the CFWG are heat treatments to kill coqui frogs without harming plants prior to export or sale. The CFWG has also invited world experts on coqui frogs to recommend control strategies. The success of the CFWG collaboration provides a model for how to combat the next invasive pest, not if it comes, but when.
Defending Against the Green Menace

For many backyard gardeners, weeding is a tiresome, endless chore. For ranchers, dairy farmers, land managers, and conservationists, however, weeds aren’t just a nuisance: they’re a threat.

Weeds are plants growing where they’re not wanted; in Hawai‘i, almost all are alien species. Weeds compete against desirable plants for sunlight, nutrients, and water. These hardy, invasive plants can overrun native plant communities, endangering whole ecosystems. By consuming water needed by forage plants, weeds can limit animal productivity. Some weeds are poisonous, a hazard to wildlife, livestock, and children; others are armed with spines, thorns, or burred seeds that injure animals and interfere with outdoor recreation. Don’t let their vigor or good looks mislead you: weeds are a drain on our resources and economy.

In 2003, CTAHR published a new tool to aid the state’s ongoing struggle with weeds. Working with government agencies, businesses, and environmental organizations, weed science Extension specialist Philip Motooka and co-authors Luisa Castro, Duane Nelson, Guy Nagai, and Lincoln Ching developed _Weeds of Hawai‘i’s Pastures and Natural Areas: An Identification and Management Guide_. This attractive full-color volume illustrates over 150 Hawai‘i weeds, describes their distribution and environmental impact, and provides information on how to manage them. To simplify weed identification, thumbnail visual keys for weedy trees, shrubs, vines, herbs, and grasses are coupled with detailed text and photographs for each featured species. By making efficient stewardship of Hawai‘i’s open spaces easier, CTAHR’s weed guide helps conserve our valuable resources and our irreplaceable living heritage.
The Kaua‘i Extension office is proof that a small group can make a difference. A staff of seven serves more than 58,000 Kaua‘i residents. From crop development to youth development, cattle nutrition to human nutrition, Extension personnel offer research and outreach programs that are as diverse and varied as their clients.

To provide a wide range of services, the agents have multiple roles. Richard Ebesu recently implemented two very different pilot programs: fruit fly control for growers and agriculture curriculum for elementary school students. Lincoln Ching cares for animals of all kinds, improving pasture for cattle, helping producers meet EPA requirements for waste treatment, and passing his skills on to young people through the 4-H livestock program. Laura Kawamura’s youth development activities, both within and outside 4-H, engage children, parents, and community volunteers; as a dietician, she’s also helped adults eat better and become more active through Kaua‘i’s Great Weigh Out, a program that will expand next year to include whole families. Before retiring as CES county administrator, Terry Sekioka coupled that task with landscape training classes that cover ornamental plants, pesticide certification, small-engine repair, and welding.

The longevity of the Kaua‘i Extension staff has let them watch the impact of their programs unfold over time. As Kawamura’s first 4-H’ers raise their own children, she can see her past efforts bear fruit. Hurricane Iniki wrecked havoc on the hydroponic vegetable-production greenhouses and new tropical flower cultivars that Roy Yamakawa introduced to Kaua‘i, but the commercial technology and plants survived and are thriving today. His work with wetland taro farmers has led to improved practices and adoption of new hybrids, providing present and future benefit to the taro industry statewide. From its most senior member, secretary Jane Kuriki, to its most recent arrival, county administrator Mike Howell, the Extension office is open to serve—and learn from—the people of Kaua‘i.
Kids deserve our best efforts. Whether you’re working to create effective public policies, trying to identify successful drug abuse prevention programs, or getting more involved with your neighborhood school, CTAHR’s Center on the Family wants to help you help Hawai‘i’s kids. The Data Center on Children and Families (uhfamily.hawaii.edu) offers easy Web-based access to more than 160 indicators of child and family well being. This world-class on-line library—the most comprehensive collection of data on Hawai‘i’s children and families found anywhere—gathers, analyzes, and presents information in user-friendly formats. By extracting useful knowledge from complicated data sets, the Center helps public officials, teachers, students, service providers, and community activists build their plans for the future on a solid foundation.

Before the Data Center was established, important information was scattered across many different government, private, and philanthropic agencies. These data were hard to find, hard to interpret, and very hard to compare. Now, child and family trend data harvested from diverse sources and tracked over more than a decade are a few mouse-clicks away.

The Center’s most recent achievement is the completion of 43 Hawai‘i community profiles, the first time that social indicator data has been organized on a neighborhood scale. Each profile, available at the Data Center Web site and also in print, is a snapshot of the area served by a public high school. Key social, economic, educational, health, and safety indicators for children, families, and kūpuna in the public high school complex are presented alongside county and state data to facilitate comparison. If you’d like to learn more about your own community or tour the state’s family landscape without leaving home, please drop in: the Data Center’s virtual door is always open.
Locally, 65 percent of babies exposed to methamphetamine before birth receive little or no prenatal care.

Shielding Babies from the Ice Storm

Each year, 550 to 600 Hawai'i newborns begin life at a terrible disadvantage. Some may suffer from birth defects and organ damage. Others will be irritable and have difficulty suckling, digesting food, and regulating body temperature. Later in childhood, they will be more likely than their peers to show behavioral problems and delayed language development. Their futures are at risk before their first breath. These unlucky infants were exposed within the womb to methamphetamine, also known as crystal, batu, or ice.

CTAHR's Dana Davidson and Marialliana Stark of UH-Mānoa's School of Nursing and Kaiser Permanente have been touring the state to draw attention to preliminary studies indicating that prenatal ice exposure has dire consequences. Their presentations have attracted large audiences on Hawai'i and O'ahu. Visits to Maui and Kaua'i are scheduled for 2004.

Davidson calls ice the “devil’s key” for its ability to penetrate tissue barriers. Within seconds of being smoked or injected, methamphetamine moves from the bloodstream to the brain, where it causes nerve cells to release a damaging flood of chemical messengers. In pregnant women the drug also crosses the placenta and enters the fetal bloodstream, transmitting the mother’s dose to a tiny developing brain.

The effects of prenatal ice exposure are difficult to separate from other disadvantages that plague many children of addicts: inadequate prenatal care, neglect, mistreatment, and multiple substance exposure. Davidson and Stark recommend that public policies encourage women to seek treatment for ice addiction, both to help women of childbearing age avoid ice use and to bring the benefits of prenatal care to babies already exposed in utero. However, Davidson emphasizes that youth outreach to prevent first ice use is the best approach: ice is too easy a habit to form and a terribly hard one to break.
Obesity and its complications consume about 10 cents of every U.S. health care dollar and cause as many as 300,000 deaths per year. Helping youths develop good eating and exercise habits is a crucial step in stemming the tide of weight-related costs and mortality, because overweight children and adolescents are more likely to become overweight adults. Unfortunately, in the past 20 years, the prevalence of overweight American kids and teens has nearly tripled. The same period has seen a marked rise in the popularity of soda and non-citrus juices and a sharp decline in milk consumption. A CTAHR research project indicates that these three trends are related.

A study by Rachel Novotny and colleagues found that O‘ahu girls ages 9–14 who consume just half the recommended allowance of three daily servings of dairy products have lower weight and girth than do girls who eat even fewer dairy servings. For girls at the same growth stage who are equally active and eat the same number of calories, drinking one more cup of milk or eating another small piece of cheese translates to weighing about two pounds less and having about half an inch less of belly fat. Calcium from non-dairy products didn’t yield the same results, suggesting that dairy’s slimming effect isn’t caused by calcium alone. Girls who drank soda in addition to increased dairy had slimmer waistlines but not lower weight. Novotny’s findings on the benefits of dairy are consistent with data from other investigators who looked at preschoolers and adults of all ages. So, whether your bones are young and growing, or not-so-young and at risk of thinning, a glass of milk may help you stay slim. Just don’t go crazy with the cookies.
An estimated 76 million cases of food-borne disease occur each year in the United States.

What can you do for less than five minutes each day to protect your health and your loved ones? Here’s a hint: your mother would approve.

If you guessed hand-washing, give yourself a clean pat on the back. Washing your hands regularly can reduce your risk of head and chest colds by 35–50% and gut infections by up to 80%. CTAHR is targeting this message to two groups whose hand-washing practices can make important impacts: food handlers and grade-schoolers.

An estimated 76 million cases of food-borne disease occur each year in the United States. Most are mild, but some are very serious, causing 325,000 hospitalizations and 5,000 deaths annually. To prevent transmission of food-borne diseases at food service establishments, CTAHR’s Jim Hollyer, Dennis Miyahara, Lynn Nakamura-Tengan, and Aurora Saulo teamed with state agencies and professional organizations to develop an illustrated sticker that gives hand-washing instructions in 14 languages. Copies of the sticker are available through the Sanitation Branch of the Hawai‘i Department of Health.

Bringing the clean-hands message to kids requires a different tactic. “Germ City: Clean Hands, Healthy People” makes the benefits of hand-washing visible—and fun. A UV-sensitive lotion, representing germs, is applied to children’s hands. They enter a lightproof tunnel to see the “germs” glow under black light, then compare germ levels before and after hand-washing to learn which areas they missed. Working with other Extension faculty and volunteers, Nakamura-Tengan has brought Germ City to more than 3,700 enthusiastic participants at schools, fairs, and festivals on Maui, the Big Island, Kaua‘i, and O‘ahu. Kids and adults alike reported more frequent, thorough hand-washing after visiting Germ City, and that means fewer sick days for Hawai‘i.
FRESH Starts and Fond Farewells

When Marlene Hapai first reviewed CTAHR’s student enrollment numbers in the summer of 2000, she found reason for concern. As a biologist familiar with population structure, the new associate dean for academic and student affairs recognized that the student body was top-heavy, with more seniors graduating than freshmen and transfer students entering. The impact of this trend wouldn’t stop at CTAHR’s door, either. With fewer students learning about agriculture, biotechnology, environmental management, and community resources, the pool of individuals available to provide those services in Hawai‘i and the wider Pacific region would shrink.

Hapai and student services specialist Allene Chun led an effort to expand CTAHR’s recruitment and retention. Departments restructured their programs to meet changing student needs. CTAHR student ambassadors reached out to high-school juniors and seniors and UH students taking general education courses offered by the College. Outreach classes engaged Native Hawaiian students and middle- and high-school teachers. The hard work has paid off with student enrollment at a 15-year high, up more than 13 percent since the new academic programs began in Fall 2002.

A new student retention program debuted in Fall 2003. FRESH Start—Freshmen Receiving Empowering Stimulating and Helping—recognizes that new students have unique needs. Before school started, incoming students received pointers on housing, food, and transportation, help with registration, an activities schedule, an invitation to join a learning community and attend classes as part of a cohort, and contact information for the FRESH Start team of graduate students able to advise and assist the newcomers. A reception for new students provided further opportunities to get questions answered and “feet wet” in a welcoming environment.

In 2004, Hapai returns home to the Big Island to be the director of the new Mauna Kea Astronomy Education Center, which will open its doors in summer 2005. The good work she has done at CTAHR will remain with us through its service to our students and their communities in future years. Thank you, Marlene.
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The University of Hawai'i is an equal opportunity, affirmative action institution